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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,046	09/28/2000	Eugene W. Lee	3981-5	9832

20575 7590 12/02/2004

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EXAMINER	
NGUYEN, BRIAN D	
ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/676,046	LEE, EUGENE W.	
	Examiner	Art Unit	
	Brian D Nguyen	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the amendment filed 7/26/04*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20 and 21* is/are allowed.

6)☒ Claim(s) *1-12,14-19 and 22-31* is/are rejected.

7)☒ Claim(s) *13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 13 and 29-30 are objected to because of the following informalities:

Claim 13, line 9, "a next time slot" seems to refer back to "a next time slot" in line 6. If this is true, it is suggested to change "a next time slot" to ---the next time slot---.

Claim 29, line 2, it is suggested to change";" to ---:---.

Claim 30 is objected as being dependent on the objected claim 29.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 recites the limitation "the unicast arbitration" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the dedicated output ports" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-4, 6-8, 14-18, 24-26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fransson et al (6,445,706) in view of Chao et al (6,667,984).

Regarding claims 1-4 and 6-8, Fransson discloses a packet scheduler comprising input ports and output ports; an arbitration circuit configured to arbitrate between the input ports and the output ports. Wherein, the arbitration circuit selects the input ports in a round robin order when two or more of the input ports have the same highest priority and a same largest weight; conducts output port arbitrations for each one of the output ports and conducts input port arbitrations for each one of the input ports winning multiple output port arbitrations; conducts output port arbitrations for all of the virtual output queues dedicated to the same output ports and conducts input ports arbitrations between the virtual output queues for the same input port issued grants during the output port arbitration; and wherein the output port arbitrations and the input port arbitrations are conducted according to both priority and number of bytes of the packets associated with the virtual output queues; and wherein the arbitration circuit increasing the priority for any input ports having unserved connection requests (the time they were stored) extending beyond a timer period (see abstract; col. 1, lines 40-63; col. 2, lines 51-65). Fransson does not specifically disclose multiple concurrent output port arbitrations. However, Chao discloses this limitation (see abstract and figure 11 where Chao teaches an arbitration for each of the output ports; in other words, Chao teaches multiple concurrent output port arbitrations). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use multiple concurrent output port arbitrations as taught by Chao in the

system of Fransson because each of the multiple output ports need a separate arbitration so that data from different input ports can concurrently transfer to different output ports for transmission.

Regarding claims 14-18 and 24-25, claims 14-18 and 24-25 are method claims that have substantially all the limitations of the respective apparatus claims 1-4 and 6-8. Therefore, they are subject to the same rejection.

Regarding claims 26 and 31, claims 26 and 31 are device claims that has the limitations of the respective apparatus claims 2 and 10. Therefore, they are subject to the same rejection.

6. Claims 5, 11-12, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fransson et al (6,445,706) in view of Chao et al (6,667,984) as applied to claims 1, 4 and 26 above, and further in view of Holden et al (6,188,690).

Regarding claims 5 and 11-12, Fransson in view of Chao does not disclose the output port arbitrations and the input port arbitrations are conducted for both multicast and unicast packets for a next time slot and wherein the arbitration circuit conducts a multicast arbitration that establishes connections for multicast packets during a next time slot and then conducts a unicast arbitration that establishes connections for a unicast packets during the next time slot for any remaining unassigned output ports. However, multicast/unicast arbitration is well known in the art. Holden this closes this feature (see col. 2, lines 53-65). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to arbitrating multicast/unicast as taught by Holden in the system of Fransson in view of Chao in order to control multicast and unicast traffics.

Regarding claims 27-30, claims 27-30 are device claims that includes the limitations of claims 5 and 11-12. Therefore, they are subject to the same ejection.

7. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fransson et al (6,445,706) in view of Chao et al (6,667,984) as applied to claims 1 and 6-8 above, and further in view of DeGrandpre et al (6,678,275).

Regarding claims 9-10, Fransson in view of Chao does not specifically disclose input/output port pointers for conducting round robin arbitration. However, this feature is well known in the art. DeGrandpre discloses pointers for conducting round robin arbitrations (see col. 2, lines 11-24; col. 3, lines 34-43). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the pointers as taught by DeGrandpre in the system of Fransson in view of Chao so that data packet can be sent orderly based on their priority/weight.

8. Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fransson et al (6,445,706) in view of Chao et al (6,667,984) as applied to claim 14 above, and further in view of Dunstan et al (6,654,371).

Regarding claims 19 and 22, Fransson in view of Chao does not specifically the use of vector multicast. However, to use vector multicast is a matter of choice, Dunstan discloses the use of vector multicast (see col. 2, line 66-col. 3, line 11). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the vector multicast as taught by Dunstan in the system of Fransson in view of Chao to meet specific needs.

Allowable Subject Matter

9. Claims 20-21 are allowed.

10. Claims 13 and 23 would be allowable if rewritten to overcome the objection and/or the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Response to Arguments

11. Applicant's arguments with respect to claims 1-12, 14-19, 22, and 24-31 have been considered but are moot in view of the new ground(s) of rejection.

The applicant argued that the arbitration scheme described in Fransson does not provide multiple concurrent output port arbitrations and therefore cannot converge multiple input ports with multiple output ports as specified in the present claims. Although the examiner believe that Fransson teaches these limitations (for example in col. 6, line 67, Fransson discloses multiple output ports and figure 3 shows a single output port arbitration, other output ports will have the same configuration as the output port shown in figure 3), the examiner use Chao reference in this Office Action to clearly show the feature of multiple concurrent output port arbitration. Therefore, the combination of the Fransson and Chao references is sufficient to render the claims obvious under 35 USC 103.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Krishna et al (6,563,837).

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D Nguyen whose telephone number is (571) 272-3084. The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/22/04

BRIAN NGUYEN
PRIMARY EXAMINER